

DOCKET NO. P05719
SERIAL NO. 10/694,450
PATENT

IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A method for providing a phase-locked loop with reduced spurious tones, comprising:

comparing a reference clock signal to an internal clock signal to generate a first signal;

generating a sampling clock signal by creating a pulse based on the reference clock signal to generate a clock signal and buffering the pulse to generate an inverted clock signal, the sampling clock signal generated based on a divided reference clock signal, the sampling clock signal having a reduced frequency with respect to the reference clock signal;

sampling the first signal based on the sampling clock signal to generate a second signal; and

generating the internal clock signal based on the second signal.

2. (Currently Amended) The method of Claim 1, further comprising:

generating at least one of an up signal [[or]] and a down signal based on the comparison of the reference clock signal to the internal clock signal;

generating a charge pump output signal based on at least one of the up and down signals;

generating the first signal based on the charge pump output signal;

generating an output frequency signal based on the second signal; and

dividing the output frequency signal by a first predetermined amount to generate the internal clock signal.

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3. (Previously Presented) The method of Claim 2, generating the charge pump output signal comprising sourcing current based on the up signal and sinking current based on the down signal, and generating a stabilized signal comprising injecting currents into a stabilization filter based on the up signal and draining currents from the stabilization filter based on the down signal.

4. (Original) The method of Claim 3, further comprising generating a loop filter output signal based on the second signal and generating the output frequency signal based on the second signal comprising generating the output frequency signal based on the loop filter output signal.

5. (Previously Presented) The method of Claim 1, further comprising:
dividing a reference frequency signal by a predetermined value, R , to generate the reference clock signal; and

dividing the reference clock signal by a predetermined value, D , to generate a reduced frequency signal,

wherein the sampling clock signal is generated based on the reduced frequency signal.

6. (Cancelled).

7. (Previously Presented) The method of Claim 2, the first predetermined amount comprising one of a predetermined value N and $N+X/D$, D comprising a predetermined value, and X comprising a predetermined positive integer value less than D .

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8. (Currently Amended) A method for providing a phase-locked loop with reduced spurious tones, comprising:

dividing a reference clock signal by a predetermined value, D, to generate a reduced frequency signal;

generating a sampling clock signal by creating a pulse based on the reduced frequency signal to generate a clock signal and buffering the pulse to generate an inverted clock signal;

comparing the reference clock signal to an internal clock signal;

generating at least one of an up signal [[or]] and a down signal based on the comparison of the reference clock signal to the internal clock signal;

generating a charge pump output signal based on at least one of the up and down signals;

generating a stabilized signal based on the charge pump output signal;

sampling the stabilized signal based on the sampling clock signal to generate a sampled output signal;

generating an output frequency signal based on the sampled output signal; and

dividing the output frequency signal by a first predetermined amount to generate the internal clock signal.

9. (Original) The method of Claim 8, further comprising dividing a reference frequency signal by a predetermined value, R, to generate the reference clock signal.

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10. (Previously Presented) The method of Claim 9, the first predetermined amount comprising one of a predetermined value N and $N+X/D$, X comprising a predetermined positive integer value less than D .

11. (Cancelled).

12. (Original) The method of Claim 8, generating the charge pump output signal comprising sourcing current based on the up signal and sinking current based on the down signal.

13. (Original) The method of Claim 8, generating the stabilized signal comprising injecting currents into a stabilization filter based on the up signal and draining currents from the stabilization filter based on the down signal.

14. (Original) The method of Claim 8, further comprising generating a loop filter output signal based on the sampled output signal, generating the output frequency signal based on the sampled output signal comprising generating the output frequency signal based on the loop filter output signal.

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15. (Currently Amended) A phase-locked loop, comprising:

a spur reduction circuit operable to receive a reference clock signal and to divide the reference clock signal by a predetermined value, D , to generate a reduced frequency signal;

a clock/buffer circuit coupled to the spur reduction circuit, the clock/buffer circuit operable to generate a sampling clock signal by creating a pulse based on the reduced frequency signal to generate a clock signal, inverting the pulse to generate an inverted clock signal, and buffering the clock signal and the inverted clock signal;

a phase detector operable to compare the reference clock signal to an internal clock signal to generate at least one of an up signal [[or]] and a down signal;

a charge pump coupled to the phase detector, the charge pump operable to generate a charge pump output signal based on at least one of the up and down signals;

a stabilization filter coupled to the charge pump, the stabilization filter operable to generate a stabilized signal based on the charge pump signal;

a sampling circuit coupled to the stabilization filter and the clock/buffer circuit, the sampling circuit operable to sample the stabilized signal based on the sampling clock signal to generate a sampled output signal;

an oscillator coupled to the sampling circuit, the oscillator operable to generate an output frequency signal based on the sampled output signal; and

a feedback divider coupled between the oscillator and the phase detector, the feedback divider operable to divide the output frequency signal by a first predetermined amount to generate the internal clock signal.

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16. (Original) The phase-locked loop of Claim 15, further comprising an input divider coupled to the phase detector and to the spur reduction circuit, the input divider operable to divide a reference frequency signal by a predetermined value, R , to generate the reference clock signal.

17. (Previously Presented) The phase-locked loop of Claim 16, the first predetermined amount comprising one of N and $N+X/D$, X comprising a predetermined positive integer value less than D .

18. (Cancelled).

19. (Previously Presented) The phase-locked loop of Claim 15, the sampling circuit comprising an n-channel transistor, a p-channel transistor and a hold capacitor, the n-channel transistor comprising a gate operable to receive the clock signal and the p-channel transistor comprising a gate operable to receive the inverted clock signal.

20. (Original) The phase-locked loop of Claim 15, further comprising a low pass filter coupled between the sampling circuit and the oscillator, the low pass filter operable to generate a loop filter output signal based on the sampled output signal, the oscillator operable to generate the output frequency signal based on the loop filter output signal.

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21. (Previously Presented) The method of Claim 5, further comprising:
generating an output frequency signal based on the second signal; and
dividing the output frequency signal by a first predetermined amount to generate the internal clock signal,
wherein the first predetermined amount comprises one of a predetermined value N and a fractional divide ratio $N+X/D$, X comprising a predetermined positive integer value less than D .
22. (Previously Presented) The method of Claim 8, wherein generating a stabilized signal comprises filtering the charge pump output signal with an active filter.
23. (Previously Presented) The phase-locked loop of Claim 15, wherein the stabilization filter comprises an active filter.

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